— CHAPTER 8 —

Hardware Installation

By itself, your CD-ROM drive is incapable of communicating with your computer. You must use a hardware link that enables your drive to ‘‘talk’’ with the rest of your computer.

Plextor’s UltraPleX drives use a SCSI interface as their link. If you own a PC, there are four ways in which you can make the SCSI connection:

1) Use a separate SCSI interface board. This is the most common method for both internal and external drives. We recommend using a 32-bit PCI bus mastering SCSI interface board to maximize the drive’s potential. Older 8-bit SCSI interface boards are not recommended. More cost-effective, but with a decrease in video performance, are 16-bit ISA bus mastering SCSI interface boards. Both these bus mastering interface technologies also allow you to take advantage of SCSI multitasking in 32-bit operating systems such as Windows 95, Windows NT, UNIX, SCO, Solaris, etc. Another possibility is to use an ISA-PIO SCSI interface board, but performance will suffer, as will multitasking.

2) Use a soundboard that also has a SCSI interface built onto it. This helps save a slot in your computer by combining the functions of two boards (SCSI interface board and soundboard) into one. Plextor recommends against using the SCSI interface on a soundcard with the UltaPleX. Doing so will limit the performance of the UltraPleX.

3) If you have an external drive, you can also use a parallel-to-SCSI interface. This is a device that plugs into the parallel port (the one your printer normally is connected to) of your computer. It is convenient, but typically at a cost of reduced performance to your CD-ROM drive.

4) If you have an external drive and a portable computer with a PCMCIA slot (Type II or III), use a PCMCIA-to-SCSI card. This is a small, credit-card size device that plugs into the PCMCIA slot. It too is convenient, but may also provide less performance than a direct connection to a 32-bit or 16-bit SCSI interface board. PCMCIA connections should, however, provide better performance than a parallel-to-SCSI interface.

NOTE: The following section is only for PC users who need to install a SCSI interface board, or a soundboard with a built-in SCSI interface, in their computer. If you plan to use a parallel-to-SCSI, or PCMCIA-to-SCSI interface, you can skip to Chapter 9. If you are a Mac user with an external drive, you can laugh at how easy life is and skip to page 30. Otherwise, proceed to page 25.

Board Installation

YOUR TASK: Install a SCSI interface board, or a soundboard with a built-in SCSI interface, in your computer.

YOUR OBJECTIVE: Provide the hardware link needed to enable your CD-ROM drive to communicate with your computer.

YOUR METHOD: Remove your computer's case. Install board and attach necessary cables.

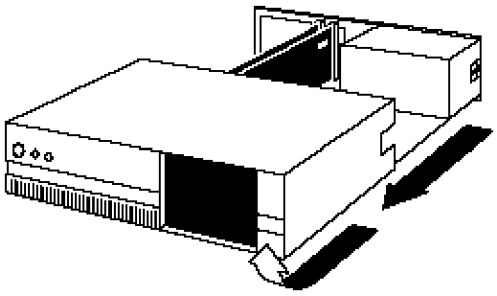
Let us point out that this is a CD-ROM drive installation and operation manual—it is not a SCSI interface board or soundboard installation and operation manual. Unless you purchased a SCSI interface board or soundboard (and its accompanying manual) bundled in the same box with an UltraPleX drive, we have no way of knowing which type of board you elect to use. There are dozens of SCSI interface boards and soundboards on the market. Each one is installed somewhat differently. Therefore, our instructions for this section should only be considered as guidelines. For more detailed instructions on how to properly install your SCSI interface board/soundboard, you should refer to the installation/operation manual that you received when you purchased the board.

Caution: If static electricity may be present in the room where you are working, discharge any you may have on your body by touching a grounded object before you remove the host adapter from its packaging.

Static electricity is a silent killer. Just a small jolt to one of the chips on your interface board may render it useless with no apparent damage visible. Positioning your computer in a location without a carpet underfoot is one method of guarding against static electricity damage. Using common sense, such as not walking on a carpeted floor in stocking feet just before you install your drive, is another.

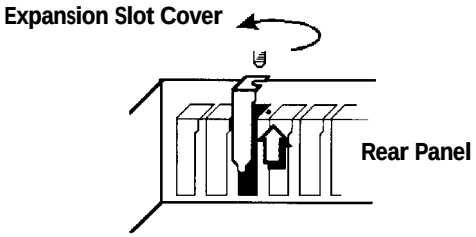
Before proceeding, make sure the power to your computer and any external peripherals is OFF and your computer is UNPLUGGED from its power source.

To remove your computer's cover, follow the directions provided by your computer's manufacturer. Typically, this involves loosening or removing several screws on the back panel of your computer and sliding off your computer's cover.



Carefully remove the SCSI interface board from its packaging. Select a vacant slot in your computer where you will install the board (refer to the manual packaged with your interface board for instructions as to which slot in your system to use). Plextor provides either 16-bit ISA or 32-bit PCI SCSI interface boards with its optional bundles, so you must use the correct slot (16-bit slots are longer than 32-bit slots). Older systems may not have a PCI slot, as this is the newer technology. If you're installing an internal drive, try to pick a slot that is closest to where the drive will be installed.

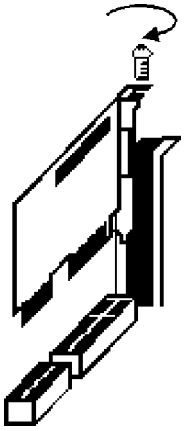
Remove the cover plate for this slot from the back panel of your computer. Keep the screw from the cover plate nearby as you will need it in a moment. Save the cover plate in case you need it at a later date.



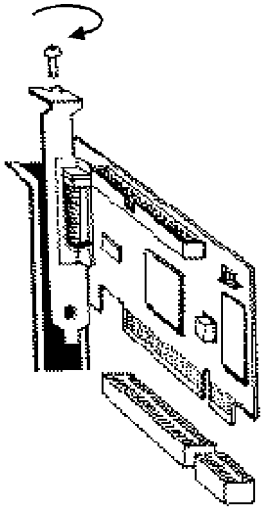
Plug the SCSI interface board into the slot you have selected. Rock the board from end to end to ensure that it seats firmly in the slot. Don't force it. If you cannot push the board down completely into the slot, remove the board and try again.

Once you have successfully inserted the board, fasten it in place using the cover plate screw that you removed earlier.

ISA Board



PCI Board



Drive Positioning

YOUR TASK: Determine where you want to install your drive.

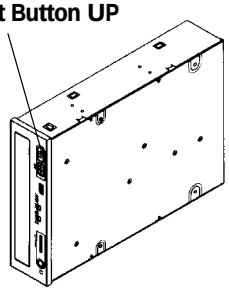
YOUR OBJECTIVE: Position the drive in the proper manner so that it operates correctly.

YOUR METHOD: If you have an internal drive, find an open bay in your computer. If you have an external drive, find an open space on your desktop.

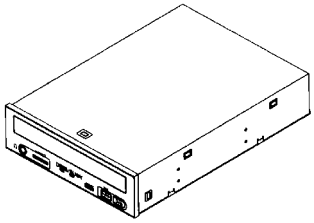
The UltraPleX may be installed either horizontally or vertically. If installed vertically, make sure that the eject button is positioned near the top of the drive. Doing so will ensure that your drive will perform as specified.

Internal

Eject Button UP



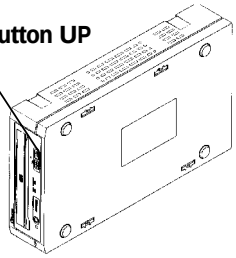
Vertical



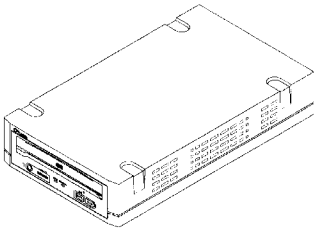
Horizontal

External

Eject Button UP



Vertical



Horizontal

NOTE: The following section is only for those installing internal drives. If you have an external drive, skip to page 30.

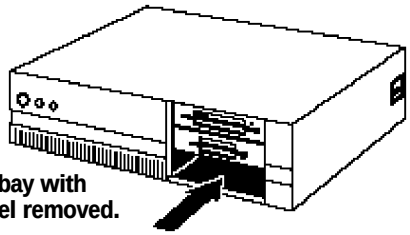
Mounting an Internal Drive

YOUR TASK: Mount your internal drive inside your computer.

YOUR OBJECTIVE: A securely positioned drive whose connectors are within easy reach of the various cables that must attach to it.

YOUR METHOD: Identify the drive bay where you will mount your drive. Remove bay cover. If necessary, use mounting rails to install drive in bay.

Your PC probably looks something like this:



Available bay with cover panel removed.

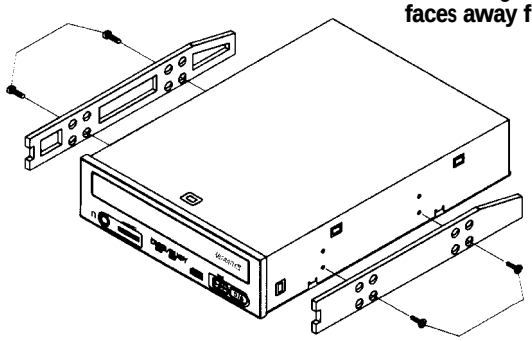
You can mount your drive in any available bay. You must remove the small panel that covers the bay that you want to use. Typically, this is done after you have removed your computer's cover. The panel can then be popped out by pressing outward lightly (in some older cases you may have to remove screws that hold the panel in place).

You now need to determine if you must install mounting rails on the sides of your drive. To do so, insert the drive into the open bay. If the drive fits tightly with little or no clearance on either side of the drive, you will not have to use mounting rails. The drive can be mounted directly into your computer.

Caution: Do not mount your drive in your computer using screws other than those supplied by Plextor. You may damage the drive if you insert screws that are too long.

If you must use mounting rails, install them as shown below:

Be sure not to mistake the inner and outer face of the rail when attaching. The smooth side of the rail faces away from the drive's chassis.



There are four holes provided on each side of the drive. To mount an internal drive in most computers, the rails should be fastened to the lower pair of holes. In some instances you may need to fasten the rails to the upper set of holes.

You will find that eight screws were supplied with your drive: four chrome screws and four black screws. Select which screws to use based on which set of holes you use to attach the mounting rails.

- ✓ Use the *chrome* screws if you use the upper set of mounting holes.
- ✓ Use the *black* screws if you use the lower set of mounting holes.

Check the positioning of the rails by sliding the drive into the bay before you connect any cables.

Check Your Jumper Settings

Once you have determined a) the correct set of holes to use to attach mounting rails, or b) that you don't have to use mounting rails, you are almost ready to finish your drive's installation. Before doing so, however, check your jumper settings one last time.

If you do not have any SCSI peripherals (e.g., hard disk, scanner, printer, etc.) in your system other than your CD-ROM drive, you should not change the jumpers from their factory setting.

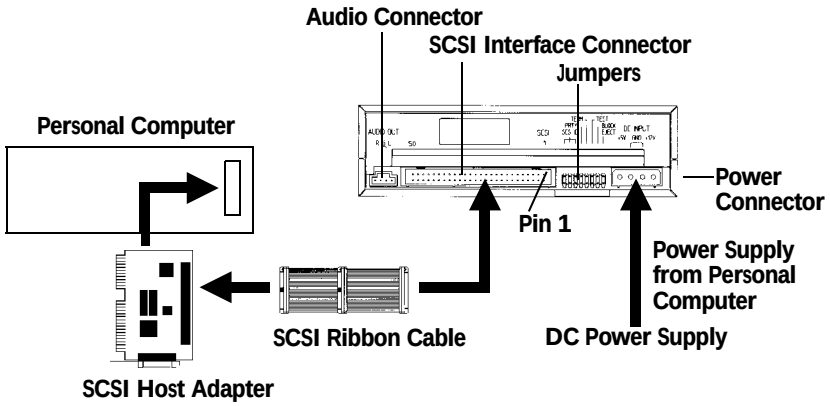
If you do have other SCSI peripherals as part of your computer system, you may need to change the settings of the SCSI ID and Terminator. See Chapters 6 and 7 for information on how to change these settings.

Cable Connections

You must make a minimum of two cable connections to your CD-ROM drive. A third cable connection need be made only if you are using a soundboard in your computer.

The two cable connections that you must make are:

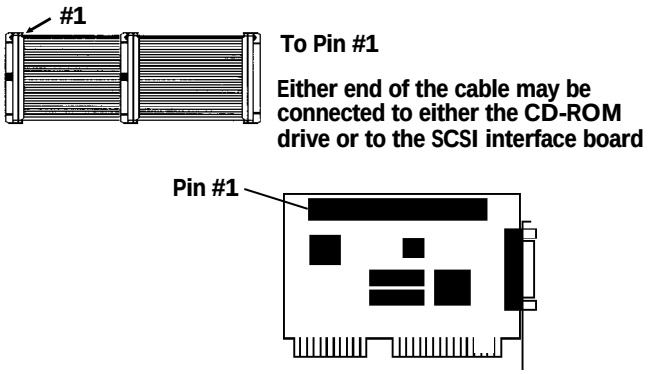
1) SCSI cable
2) power cable



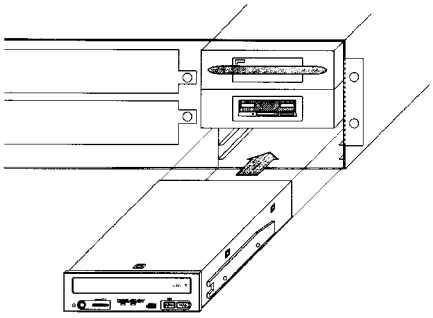
The SCSI cable you will need is a standard 50-pin flat ribbon cable. If you already have one other SCSI peripheral (such as a hard disk), and your existing cable has only two connectors, remove the cable and replace it with a cable with additional connectors. Connect the SCSI host adapter to a connection on either end of the cable. Connect the two peripherals to the other two connectors (one at the middle connector and one at the end of the cable). Refer to Chapter 7 of this manual for setting the termination of the devices.

CAUTION: It is easy to accidentally plug your SCSI ribbon cable upside down into both your drive and SCSI interface board. Accordingly, be sure you match the red stripe along one side of the SCSI cable to pin 1 on the interface board and pin 1 on the drive (as shown on the next page). Each connector on the ribbon cable has a "key" in the middle. This key should fit into a slot in the middle of each connector of the interface board, your UltraPleX CD-ROM drive, and any other SCSI peripherals. Additionally, ensure there are no kinks or knicks in the cable and that the length does not exceed 1.5 meters.

Double-check your work; you must ensure the side of the SCSI cable with the red stripe is matched to pin 1 on the interface board and on the drive.



The easiest way to install your SCSI cable is to plug it into the SCSI connector on the rear panel of the drive before you insert the drive into your computer. Then you can thread the cable through the front of the open bay you plan to use and back toward the SCSI interface board. Connect the cable to your SCSI interface board and finish mounting your drive in the proper position. The drive should slide smoothly into the bay. If it does not, check for obstructions in the bay and ensure the side rails (if needed) are attached properly.



You now need to make the power connection. In most computers you will find additional power connectors that are ready for use. Check the cable running from your power supply to your hard disk and see if it has extra connectors on it. If so, you can plug one of these into the power connector found on the rear panel of the CD-ROM drive.

If you do not find any additional connectors available (either because they were not supplied, or they are all in use), you will have to buy a "splitter" or a "Y-connector." These can also be found at most computer stores. If you are in a hurry to get started, you can probably unplug the power connector from your 5.25" floppy drive (if you

have one) and plug it into your CD-ROM drive. You will be able to use your CD-ROM drive until you have the opportunity to buy a "splitter" or "Y-connector." (Of course, you will lose the use of your 5.25" drive until you buy a splitter/Y-connector.)

If your computer has only a 3.5" floppy disk drive, you may find that you do not have a power connector that is the correct size to plug into your CD-ROM drive. Once again, you can turn to your local computer store for a splitter to solve this problem, or you might find an adapter that converts the smaller-sized power plug found on a 3.5" drive to the size required for your CD-ROM drive.

A third cable, an audio cable, must be used if there is a soundboard in your system. This cable runs from the four-pin audio output connector on the rear panel of your drive to your soundboard. See page 34 for more information about audio cables.

Installation of your internal drive is now complete. Skip to page 33.

External Drive Installation

YOUR TASK: Connect cables from your external drive to your PC or Mac. Check to see if switch, dial, and terminator settings need to be adjusted.

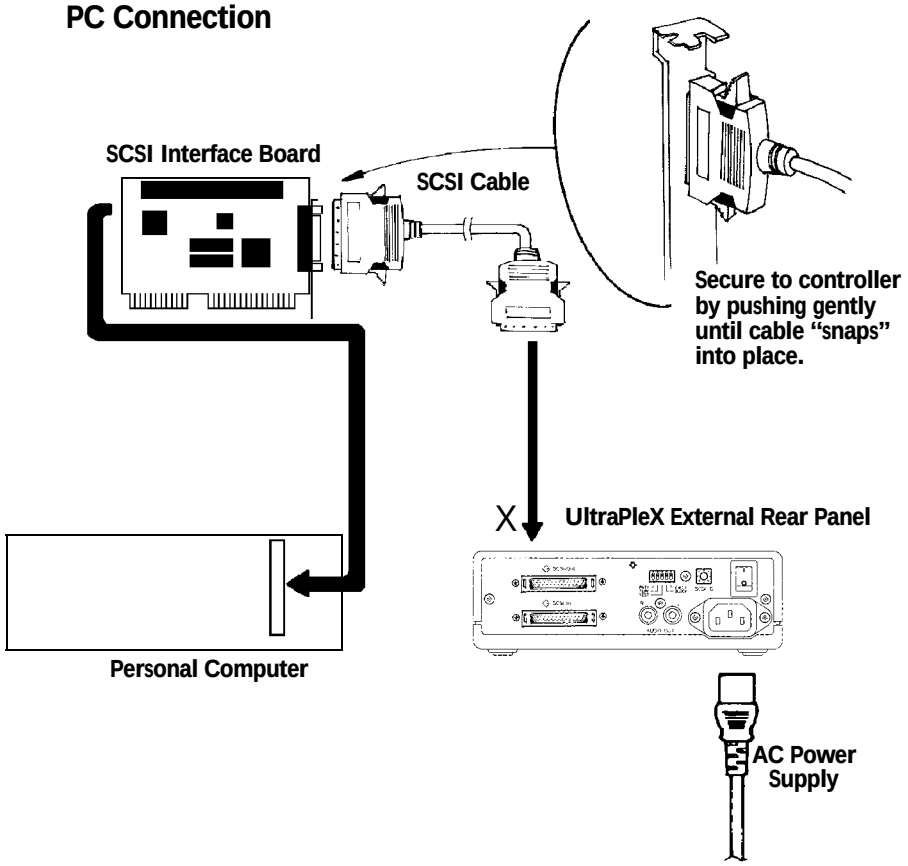
YOUR OBJECTIVE: A well-functioning drive that does not conflict with any other peripherals in your computer system.

YOUR METHOD: Follow directions below for making cable connections. Review your current computer setup to see if the potential for conflicts exists. If so, make necessary switch, dial, and/or terminator changes.

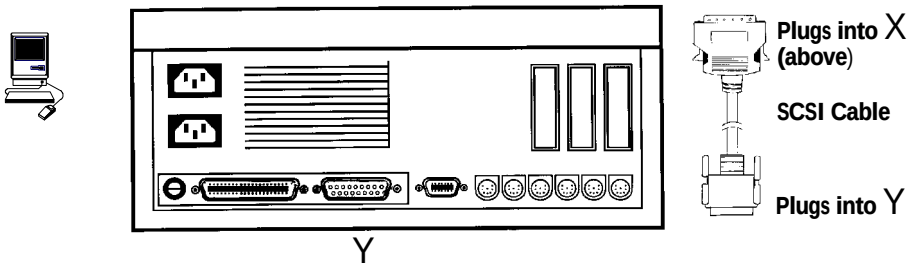
If you are installing a single UltraPleX external drive, and you have no other SCSI peripherals attached to your system, you should leave the switches, dial, and terminator found on the rear panel of your drive at their factory settings. If you do have additional SCSI peripherals (e.g., scanner, printer) attached to your computer, you may need to change your switch, dial, and terminator settings. See Chapters 6 and 7 for information on how to change these settings.

If you are installing a single UltraPleX external drive, connect it as shown on the next page:

PC Connection

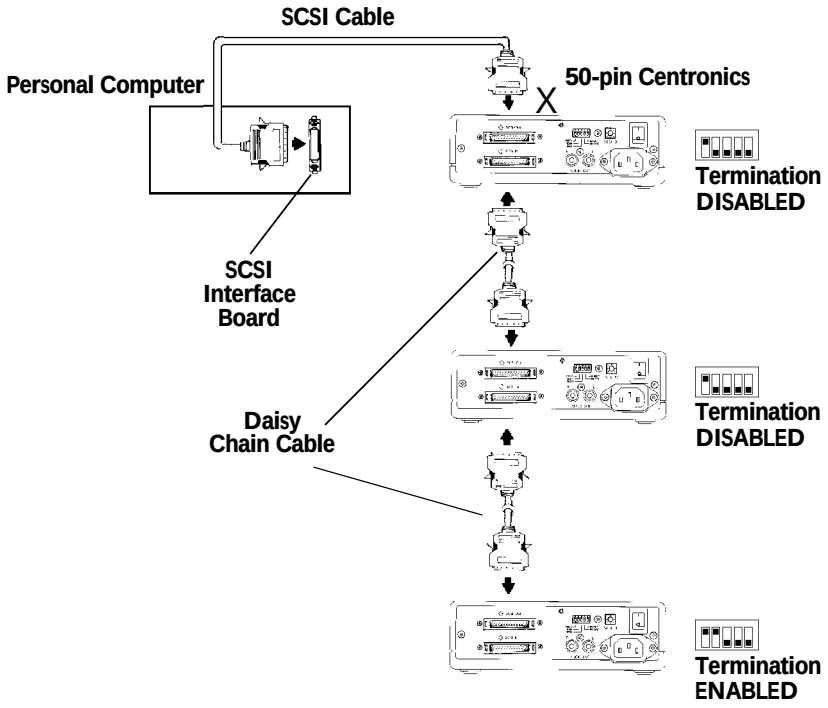


Mac Connection (rear view of a Mac)

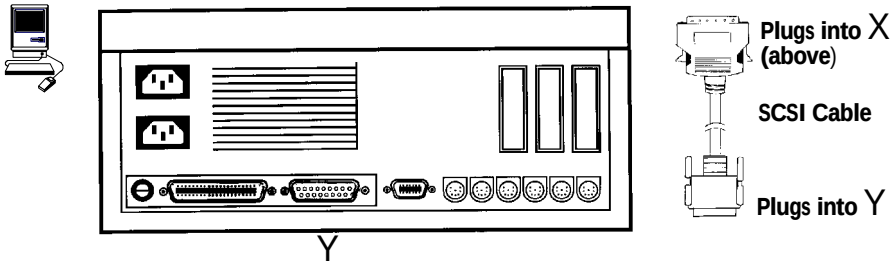


If you are installing more than one UltraPleX external drive (or one external UltraPleX and other external SCSI peripherals), connect them as shown below:

PC Connection



Mac Connection (rear view of a Mac)



NOTE: The following section is only for those installing a soundboard in their PC. If you are not using a soundboard, skip to Chapter 9.

Soundboard Installation

YOUR TASK: Install a soundboard in your PC.

YOUR OBJECTIVE: Make sure that the soundboard works properly with your CD-ROM drive.

YOUR METHOD: Follow the instructions for installation that came with your soundboard. Follow the instructions given below to connect the soundboard to your CD-ROM drive.

From Plextor's perspective, soundboards fall into one of three major categories:

1) Soundboards that have no CD-ROM drive interface (e.g., ATI Stereo F/X, Logitech Sound Man 16, Turtle Beach Multi-Sound). Most soundboards fall into this category.

2) Soundboards that have a proprietary or IDE CD-ROM drive interface built onto the board (e.g., Creative Labs Sound Blaster, Orchid Sound Producer Pro, Wearnes Tech Beethoven ADSP-16). Typically, the only drives that can be attached are mediocre performers that sell for a low price.

3) Soundboards that have a SCSI CD-ROM drive interface built onto the board (e.g., Media Vision Spectrum 16, Diamond SonicSound, Prometheus Aria 16SE). Any SCSI CD-ROM drive can be attached to this type of soundboard and should work if the proper device drivers are used. However, the SCSI interface will not be high performance.

If you own a soundboard that falls into category #1 or #2 and want to use it with your UltraPleX drive, you must also buy a separate SCSI interface board. You should follow the directions starting on page 22 regarding the installation of a SCSI interface board. Then, check the diagrams given on page 34 to see how you should connect your audio cable.

If you own a soundboard from category #3, you do not have to buy a separate SCSI interface board. However, most soundboards with a built-in SCSI interface do not perform well because they use only an 8-bit SCSI interface. (This is true even if you buy a "16-bit" soundboard. The "16-bit" refers to the audio channel, not necessarily the SCSI data channel. The soundboard may have only an 8-bit SCSI interface on it.) Plextor recommends the use of a separate SCSI interface.

Whichever category your soundboard falls into, you will find that the best source of information about installing the soundboard in your computer is your soundboard's manual. Once you have successfully installed your soundboard in your computer, you can continue to the next section, which describes the different cable connections that need to be made.

Audio Cables

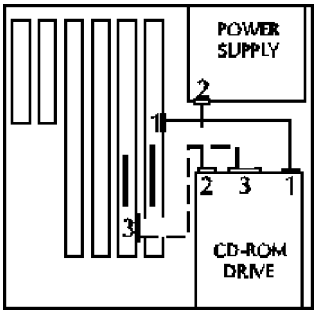
We include two audio cables with your internal CD-ROM drive SCSI card kit and one cable with your external drive SCSI card kit. One cable delivered with your internal drive is MPC compliant, and the other has connectors designed for use with Sound Blaster sound cards. The cable delivered with your external drive has two RCA-type color-coded connectors at one end, which connect to your drive, and a single stereo mini-jack at the other end, which plugs into the line-in receptacle on your soundboard (at the back of your computer).

If you purchased an internal drive SCSI card kit and you have a sound card other than Sound Blaster that is not MPC compliant, you will have to purchase a different audio cable from a computer supply store. We can help by recommending several vendors (see listing, p. 62) who offer audio cables, and can get them to you quickly at a reasonable price. Call our Technical Support Department directly at 800-886-3935.

Please see next page for diagrams illustrating the cable connections.

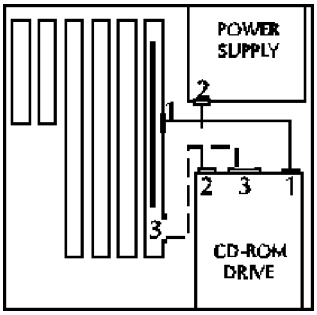
The following diagrams show where the SCSI cable and audio cable need to be connected to your internal CD-ROM drive:

Soundboard without SCSI Interface



1 **Audio Connector**
2 **Power Connector**
3 **SCSI Connector**

Soundboard with SCSI Interface



1 **Audio Connector**
2 **Power Connector**
3 **SCSI Connector**

— CHAPTER 9 —

Software Installation

YOUR TASK: Install software onto your computer system to enable the CD-ROM drive to operate optimally within your specific operating system.

YOUR OBJECTIVE: Enable your CD-ROM drive to communicate with the rest of your computer system.

YOUR METHOD: Identify your operating system and refer to the section of this chapter, or the Plextor Manager manual, that pertains to your operating system.

A device driver is a software program that allows your computer to interact with your CD-ROM drive. If you do not use a device driver, or you use an outdated version of the required device driver, you will not be able to operate your CD-ROM drive. The lack of a device driver, or the use of an improper version of a device driver, are the most common source of business for Plextor's Technical Support Department.

- For PC users with Windows 95: please see the Plextor Manager manual.
- For Windows 95 installation: please see page 65.
- For PC users with DOS/Windows: please see the Plextor Manager manual.
- For Apple computer users: please see Mac manual.
- For PC users with IBM OS/2: please see page 37.
- For PC users with Windows NT: please see page 38.
- For other OS users, please see applicable SCSI CD-ROM installation procedures.

OS/2

Installation Procedure

To install OS/2 from your OS/2 CD-ROM disc, you first need to verify that your SCSI interface board is supported by OS/2. Check your OS/2 manual and the README file on the floppy disk that comes with the OS/2 CD-ROM for information on which SCSI interface boards OS/2 supports.

If your SCSI interface board is on OS/2's list of supported hardware, you can follow the installation instructions provided by IBM.

However, if your SCSI interface board is not on OS/2's list of supported hardware, you must contact the manufacturer of your board and request an OS/2 software device driver. (See listing of key contacts on page 62.)

The OS/2 device driver files that you need from your SCSI interface board's manufacturer end with an ''.ADD'' extension. They need to be copied into the CONFIG.SYS file on the OS/2 installation floppy disk. Your SCSI interface board manufacturer will provide you with specific instructions.

Adding CD-ROM Support After OS/2 Has Already Been Installed

1) You first need to verify that your SCSI interface board is supported by OS/2. Check your OS/2 manual, and the README file on the floppy disk that comes with the OS/2 CD-ROM, for information on which SCSI interface boards OS/2 supports. If your SCSI interface board is included on the list of supported hardware, you can skip to step #3.
2) If your SCSI interface board is not on OS/2's list of supported hardware, you must contact the manufacturer of your board and request an OS/2 software device driver. (See listing of contacts on page 62.)
3) Once you have confirmed that your SCSI interface board is supported by OS/2, or you have obtained the necessary device driver files, run OS/2's Selective Install program to set up your SCSI interface board and CD-ROM drive. In the ''SCSI Host'' field, select your board. (If your board was already installed and running, your SCSI interface board should already be selected, and there is no need for you to change this entry.) The CD-ROM drive should automatically be detected. In the event that the CD-ROM drive is not seen, please go to the ''CD-ROM Drive'' field, select ''Texel/Plextor 3024/5024, 3028/5028, 4PleX''. Then, select ''Install'' and insert the OS/2 floppy disks when requested. After rebooting, your CD-ROM drive should appear in the ''Drives'' folder.

OS/2 Troubleshooting Tip

If you have difficulty getting OS/2 to recognize your CD-ROM drive and SCSI interface board, you should first verify that all of your hardware is operating properly.

This is best done by installing DOS. If your system also does not work under DOS, you probably have a hardware problem that needs to be resolved before you can go any further. Refer to the Troubleshooting guide in Chapter 12. If your system works under DOS (but not OS/2) review your device driver installation and verify that the SCSI interface board driver and CD-ROM support (see step #3 on page 37) is loaded correctly.

Windows NT 4.0 (and Below)

Installation Procedure

To install Windows NT from your NT CD-ROM disc, you first need to verify that your SCSI interface board is supported by NT. Check your NT manual for information on which SCSI interface boards NT supports.

If your SCSI interface board is on NT's list of supported hardware, you can follow the installation instructions provided by Microsoft.

If your SCSI interface board is not on NT's list of supported hardware, however, you must contact your board's manufacturer and request an NT software device driver (see listing of key contacts on page 62).

The files you obtain need to be added to the NT installation floppy disk(s) that came with your NT CD-ROM disc. Your SCSI interface board manufacturer will provide you with specific installation instructions.

Adding CD-ROM Support After NT Has Already Been Installed

1) You first need to verify that your SCSI interface board is supported by NT. Check your NT manual for information on which SCSI interface boards NT supports. If your SCSI interface board is included on the list of supported hardware, skip to #3.

2) If your SCSI interface board is not on NT's list of supported hardware, you must contact your board's manufacturer and request an NT software device driver (see listing of key contacts on page 62).

3) Run NT's Setup program to add support for your SCSI interface board. Select "Add/Remove SCSI Adapters . . ." from the menu. Choose your SCSI interface board from the list or, alternately, add the driver you obtained from your SCSI interface board manufacturer.

4) Shut down your system and connect your UltraPleX to the SCSI controller.

5) Power ON your computer and your UltraPleX drive should now be visible to the system.

Windows NT Troubleshooting Tip

If you have difficulty getting NT to recognize your CD-ROM drive and SCSI interface board, you should first verify that all of your hardware is operating properly.

This is best done by installing DOS. If your system also does not work under DOS, you probably have a hardware problem that needs to be resolved before you can go any further. If your system works under DOS, but not NT, review your device driver installation and verify that the SCSI interface board device driver and CD-ROM support (step #4, above) are loaded correctly.